

Management system oversight & evaluation tools

*DGAC experience concerning air
operators surveillance*

Andy DUFOUR, DSAC
Head of aeroplanes operations office

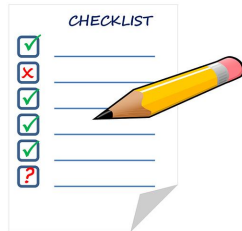


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Four complementary tools



1. SMS expectations guide

- Used by operators/inspectors during initial certification

2. Interview guide

- Used by inspectors during audit



3. Requirements check-list

- Used by inspectors during/at the end of audit

4. Performance assessment tool

- Used by inspectors after audit

1. SMS expectations guide

What is it?

- A detailed explanation of regulation, expectations on operator SMS organization
- For Operators & Inspectors
- Key points for : Risk, compliance, change management
- Published on DGAC Website

Structure

1. Organization and line of responsibilities
2. Safety Policy
3. Risk Management
4. Safety training
5. Documentation
6. Compliance Monitoring
7. Management of Change
8. Interfaces
9. Performance of the Management System



**Published guidance material
(around 80 pages)**

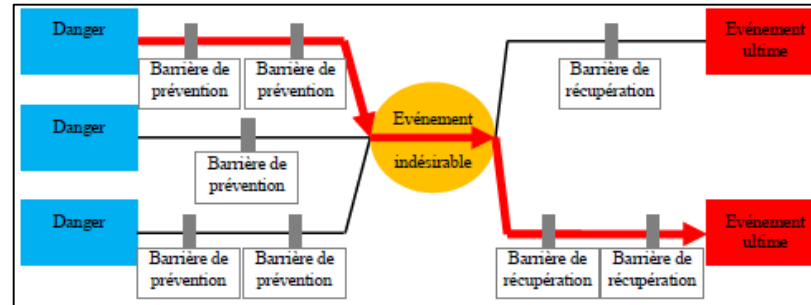
Link : [DGAC SMS Guide](#)

1. SMS expectations guide

Key points coming from state of the art methodologies

Example : section “Risk management”

- Subsection “Risk identification” : Bowtie modeling - methodology and examples



- Subsection “Risk assessment”

*Qualitative assessment
derived from ERC matrix*

Efficacité des barrières séparant le danger de l'événement ultime				Gravité de l'événement ultime du scénario
Efficace	Limitée	Minimale	Inexistante	
				Catastrophique
				Majeur
				Mineur
				Négligeable

INACCEPTABLE

ACCEPTABLE

*Quantitative assessment
derived from SIRA matrix*

Probabilité (P) de l'événement ultime du scénario par heure de vol				Gravité de l'événement ultime du scénario
$P < 10^{-9}$	$10^{-9} < P < 10^{-7}$	$10^{-7} < P < 10^{-5}$	$10^{-5} < P$	
				Catastrophique
				Majeur
				Mineur
				Négligeable

INACCEPTABLE

ACCEPTABLE

2. Interview guide

What is it?

- A detailed list of questions
- Used by the inspector as a guide during the interviews

Structure

1. Organization and line of responsibilities
2. Safety Policy
3. Risk Management
4. Compliance Monitoring
5. Management of Change
6. Documentation
7. Interfaces
8. Safety training
9. Performance of the Management System

→ Each section is then divided in sub-sections




**All questions are put together in a word document
(around 40 pages)**

2. Interview guide

Example :

section “**Compliance Monitoring**” subsection “**Follow-up of corrective actions**”

Questions	Observations/Evidence
Is there a procedure for the resolution of non-conformances? <i>What are the internal sources of non-conformances (audits, compliance checks, investigations, occurrences reports, other,...)?</i> <i>What are the external sources of non-conformances (audits and inspections by the authority, IOSA, other,...)?</i>	
How are non-conformances assigned? <i>In case of a transverse non-compliance common to multiple entities, who decides the corrective actions? Coordination? Arbitration?</i>	
How are the corrective actions formalized, communicated, processed and followed-up? <i>Who is in charge of checking the adequacy of a corrective action? How?</i> <i>Who is in charge of checking the effective implementation of a corrective action? In a timely manner? How?</i> <i>How and when is the rootcause analysis performed?</i> <i>Is there a tool for the follow-up of corrective actions?</i>	
How is the effectiveness of corrective actions assessed? By whom? <i>Have effectiveness criteria been identified when the corrective action had been defined?</i> <i>Is there an overall assessment of the effectiveness of corrective actions?</i>	



This is not a compliance check-list !



This interview guides aims at collecting all evidences that enable assessing compliance and performance of the SMS

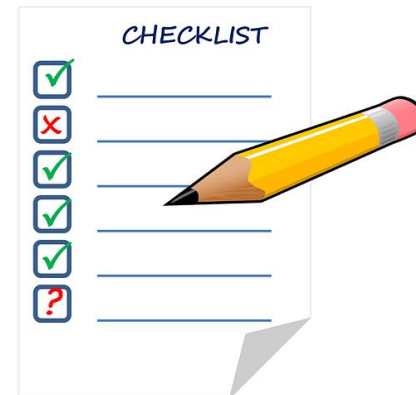
3. Requirements check-list

What is it?

- A list of all applicable requirements (including GM)
- Used by the inspector to check that all requirements have been covered

Structure (same as the interview guide)

1. Organization and line of responsibilities
2. Safety Policy
3. Risk Management
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9. Performance of the Management System



3. Requirements check-list

Example :

section “**Compliance Monitoring**” subsection “**Follow-up of corrective actions**”

Ref	Requirements	Checked? (Y/N)	Finding or Comment
AMC1 ORO.GEN.200 a)6) § (d)(2)	Compliance monitoring documentation (2) In addition, relevant documentation should also include the following: (vi) the compliance monitoring programme, reflecting: (D) follow-up and corrective action procedures;		
GM1 ORO.GEN.200 (a) (6) § (d)	The operator retains the ultimate responsibility for the effectiveness of the compliance monitoring function, in particular for the effective implementation and follow-up of all corrective actions.		
ORO.GEN.150	After receipt of notification of findings, the operator shall: (a) identify the root cause of the non-compliance; (b) define a corrective action plan; and (c) demonstrate corrective action implementation to the satisfaction of the competent authority within a period agreed with that authority as defined in ARO.GEN.350(d).		



**During the audit, this check-list is not the primary tool for the inspector.
It is only used to record the findings at the end of the day.**

4. Performance assessment tools

Criteria Survey tool

8 performance criteria

- Safety culture
- Risk management
- SMS governance
- Corrective actions
- Management of change
- Interfaces
- Documentation
- Safety promotion

→ 5 items each

Safety culture		
The accountable manager and nominated persons are involved in flight safety	Examples: <ul style="list-style-type: none"> - availability for discharging their responsibilities - involvement in safety promotion 	Evaluation scale
Just culture principles are applied to all personnel	Examples: <ul style="list-style-type: none"> - uniform application to all personnel - limit between acceptable and unacceptable defined and adequate 	
All personnel know their safety responsibilities	Examples: <ul style="list-style-type: none"> - good reporting - good knowledge of safety risks associated with their activities 	
Senior managers are outward looking	Examples: <ul style="list-style-type: none"> - knowledge of the work done outside (including safety recommendations) - transparent exchange with the authority 	
Managers and personnel apply best practices	Examples: <ul style="list-style-type: none"> - knowledge and implementation of EASA SIBs - promotion of best practices 	

→ [Web-based survey](#)

4. Performance assessment tools

Computation tool

Assessments

- Inspectors
- Flight Inspectors
- Inspector in charge
- Local management

8 Criteria divided
into 5 Items

- Safety culture
- Risk management
- SMS governance
- Corrective actions
- Change management
- Interfaces
- Documentation
- Safety promotion

For each
operator

Average of
assessments
(2 years results)
computation

Risk management		Evaluation scale
In addition to the mandatory error and human factors		
Mandatory factors, including human of systemic aspects		
The operator provides the authority with a consolidated analysis within a reasonable timeframe		
Diverse data sources are used for hazard identification		Examples:- - deadlines of EU n°376/2014 are fulfilled - analysis process is under control
The risk register exists and is up-to-date		
		Examples:- use of internal compliance monitoring data - use of external data (other safety occurrences, recommendations,...)
		Examples:- internal occurrences are taken into account - external occurrences are taken into account

→ [Web-based
survey](#)



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4. Performance assessment tools

Communication tool

- ✓ To prepare annual meeting between authority senior management and operator's accountable manager
 - Keynotes for inspectors
 - Presentation model for an equal treatment
- ✓ To organize RBO results introduction
 - Methodology and regulatory explanations
 - Operator profile
 - Compliance performance
 - Management system performance
 - Operator strengths and improvements
- ✓ To Justify oversight plan for the year to come

Criterion	Evaluation Results
Safety culture	
Risk analysis	
SMS steering	
Corrective actions	
Change management	
Interfaces management	
Documentation	
Safety promotion	
Compliance rate	
Reactivity index	

Comparison with EASA Management system assessment tool

FOUR SAME COMPONENTS

1. SMS guidance

2. Interview guide

3. Requirements
check-list

5.2.4 Compliance monitoring outcomes e.g. audit results including corrective and preventive actions follow-up.

PRESENT	SUITABLE	OPERATIONAL	EFFECTIVE
<p>The organisation has documented procedures for the identification and follow-up of corrective actions and preventive actions.</p> <p>There is a process for how audit results are communicated to the accountable manager and senior management.</p> <p>The interface between compliance monitoring and the safety risk management processes is described.</p>		<p>The identifying and follow-up of corrective and preventive actions is carried out in accordance with the procedures including causal analysis to address root causes.</p> <p>The status of corrective and preventive action is regularly communicated to relevant senior management and staff.</p>	<p>The organisation regularly reviews the status of corrective and preventive actions.</p> <p>The organisation investigates the systemic causes and contributing factors of findings.</p> <p>Significant findings are used in internal safety training & safety promotion sessions.</p> <p>The audit results and root causes, causal and contributing factors are analysed and considered when reviewing internal policies and procedures.</p> <p>There is regular communication between compliance monitoring staff and staff involved in other SMS activities.</p>
COMPLIANCE		EFFICIENCY →	

4. Performance assessment tool

What to look for				
<ul style="list-style-type: none"> Review the methods used for causal analysis Is the method used consistently? Review any repeat findings or where actions have not been implemented or overdue. Check for timely implementation of actions. Awareness of senior management of the status of significant findings and related CA/PAs. Appropriate personnel participate in the determination of causes and contributing factors. Look for consistency between internal audit results and external audit results. 				
Corresponding EU/EASA Requirements				
Air Operations	Aircrew	Aerodromes	ATM/ANS	ATCO Training Organisations
ORO.GEN.200 'Management system' point (a)(6)	ORA.GEN.200 'Management system' point (a)(6)	AMC1 ADR.OR.D.005(b) (11) 'Management system' point (a)(1) points (b) and (e)	AMC1 ATM/ANS.OR.B.005(c) Management system COMPLIANCE MONITORING	ATCO.OR.C.001 'Management system of training organisations' point (f)



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Comparison with EASA Management system assessment tool

- **The European tool and the French tools share approximately the same content** (same requirements, same questions, same performance markers)
- **We decided to split the assessment in 4 clearly identified steps:**
 - 1. SMS expectations** (during certification)
 - 2. Data collection** (during the audit)
 - 3. Compliance reporting** (at the end of the audit)
 - 4. Performance reporting** (1-4 weeks after the audit)

→ Performance is assessed after the end of the audit, to enable second thought on the overall SMS performance.